

REMARKS

Claims 1-5, 10, and 12-16 are pending. Claim 1 has been amended. Claim 11 has been cancelled. Reconsideration and allowance of the present application based on the following remarks are respectfully requested.

Applicants respectfully request entry of this amendment as no new issues are raised by the amendment and it places the application in condition for allowance. Specifically, the amendment to claim 1 has already been considered by the Examiner on page 5 of the Final Office Action.

Claim Objections

Claims 2, 3, and 11 were objected to under 37 C.F.R. § 1.75 as being duplicative. Applicants have amended claim 1 and cancelled claim 11. In view of these Amendments, Applicants respectfully submit that claims 2, 3, and 11 are no longer duplicative and that this objection is moot.

Claims Rejections Under 35 U.S.C. § 102

A. Claims 1, 4, and 5 were rejected under 35 U.S.C. § 102(b) over Paoli (U.S. Patent No. 5,742,631). Applicants respectfully traverse this rejection.

Claim 1 recites, in part, a semiconductor laser that includes an active layer formed directly on the mesa structure and being a core of a waveguide, and a current blocking layer formed on the etched substrate in both sides of the mesa structure. In contrast, Paoli discloses an active layer 134 but the active layer 134 is not directly on the mesa structure 500, and further discloses a current blocking layer 124 formed on the non etched substrate 102 under the mesa structure 500 (See, for example, Figure 5).

Furthermore, the semiconductor laser of the present invention has a vertical current path from a first electrode to a second electrode through the substrate, however, the laser arrays of Paoli have a horizontal current path from a p-type contact 145 formed in a side of the mesa structure 500 to an n-type contact 146 formed on the mesa structure 500. In the laser arrays of Paoli, current does not follow from the n-type contact 146 to an n-type contact 147 through the substrate 102 since the current blocking layer 124 is formed on the substrate 102 (See, for example, Figures 1 and 5). Therefore, a structure of the present invention is different from that of Paoli.

Accordingly, Paoli fails to teach, or even suggest, a semiconductor laser that includes an active layer formed directly on the mesa structure and being a core of a waveguide, and a

current blocking layer formed on the etched substrate in both sides of the mesa structure, as recited in claim 1.

Claims 4 and 5 are believed allowable for at least the reasons presented above with respect to claim 1 by virtue of their dependence upon claim 1. Accordingly, Applicants respectfully request reconsideration and withdrawal of this rejection.

Allowable Subject Matter

Applicants appreciate the Examiner's indication that claims 10 and 12-16 are allowed. In view of the foregoing, all of the claims (claims 1-5, 10, and 12-16) are believed allowable over the prior art of record.


Conclusion

Therefore, all objections and rejections having been addressed, it is respectfully submitted that the present application is in a condition for allowance and a Notice to that effect is earnestly solicited.

Should any issues remain unresolved, the Examiner is encouraged to contact the undersigned attorney for Applicants at the telephone number indicated below in order to expeditiously resolve any remaining issues.

Respectfully submitted,

MAYER BROWN ROWE & MAW LLP

By:  *Reg No. 5,873*
for Yoon S. Ham
Registration No. 45,307
Direct No. (202) 263-3280

YSH/VVK
Intellectual Property Group
1909 K Street, N.W.
Washington, D.C. 20006-1101
(202) 263-3000 Telephone
(202) 263-3300 Facsimile

Date: July 6, 2005